

Turlock Management Zone Pilot Study

Steering Committee Meeting

Turlock Irrigation District
February 12, 2019



MEETING AGENDA

- Introductions/Agenda Review
- Management Zone Pilot Study Overview
- Steering Committee Formation
- Initial Project Tasks
 - Management Zone boundary
 - Identification of nitrate-impacted areas
 - Early Action Plan Development
- Involvement in Study by Representatives of other High Priority Groundwater Basins
- Overview of Next Steps
- Review Action Items
- Next Steering Committee Meeting

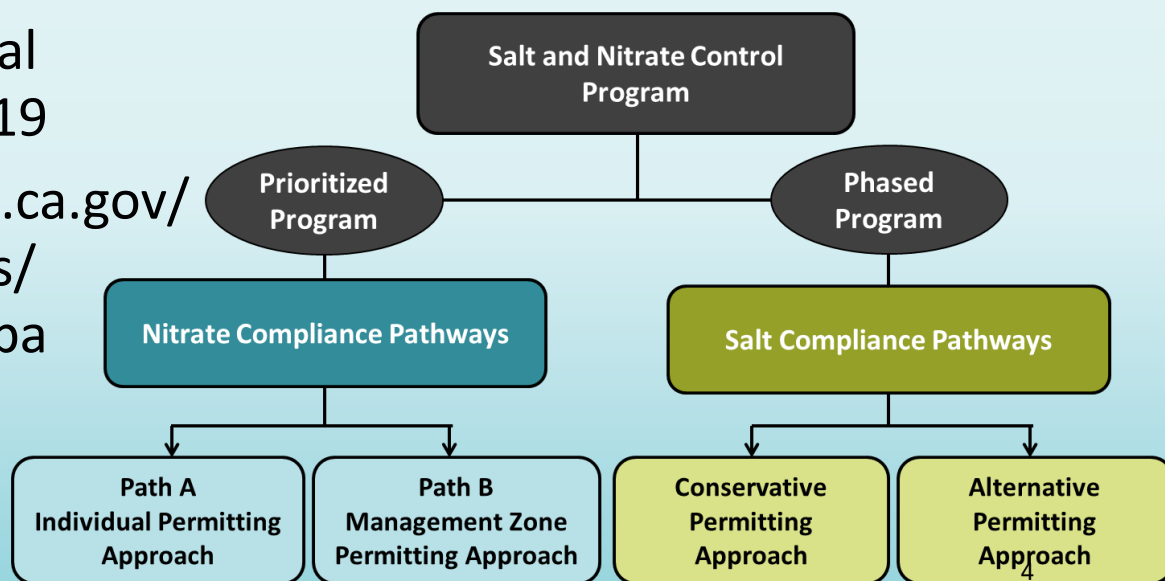


MANAGEMENT ZONE PILOT STUDY OVERVIEW



NITRATE CONTROL PROGRAM

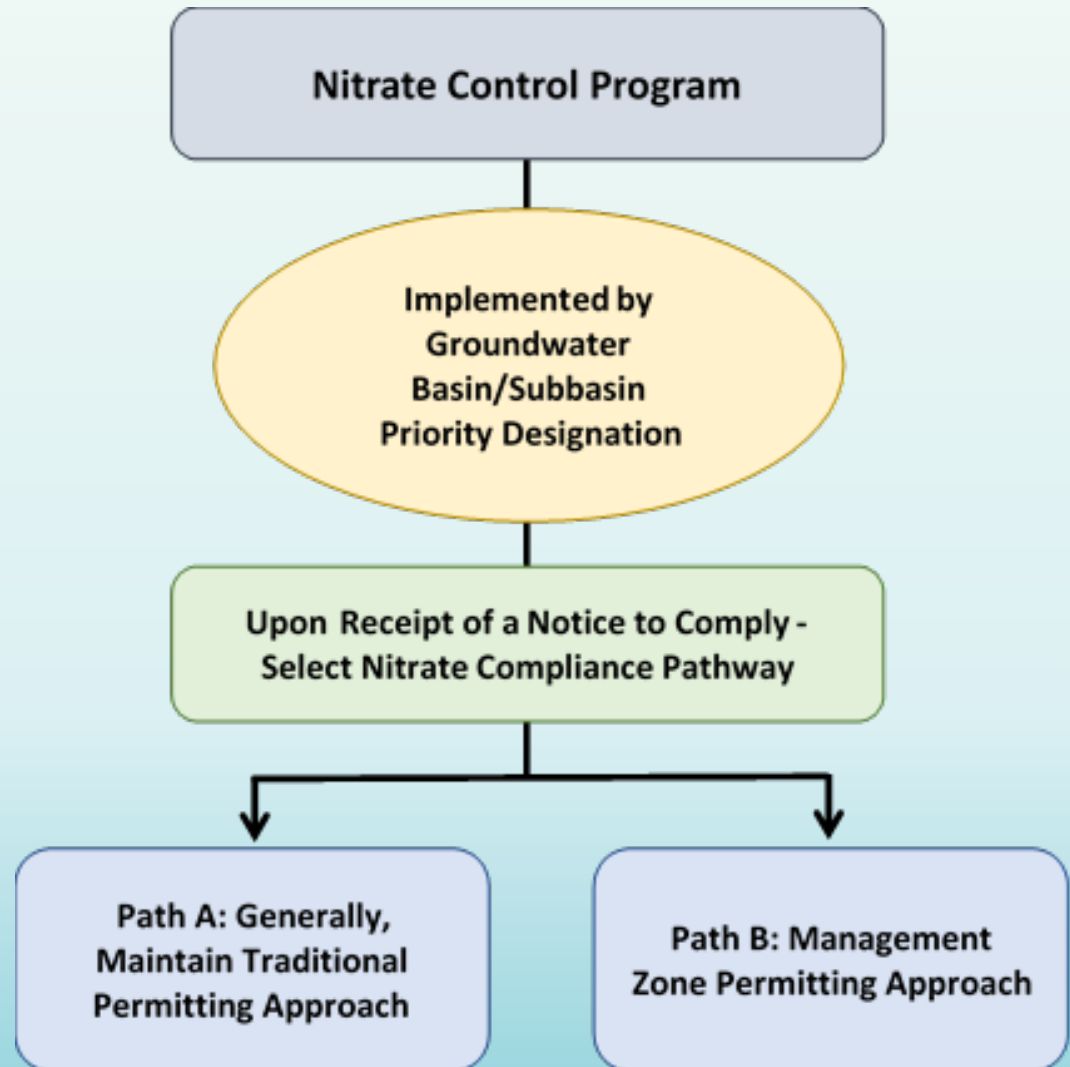
- Proposed Management Zone Pilot Study is an outcome of the CV-SALTS initiative
- Basin Plan amendments, which incorporated the Salt and Nitrate Control Program recommended by the SNMP, approved by the Board on May 31, 2018
- State Water Board currently reviewing the Central Valley Basin Plan amendments
- State Water Board approval anticipated in summer 2019
- https://www.waterboards.ca.gov/centralvalley/water_issues/salinity/#saltnitrate_cp_bpa



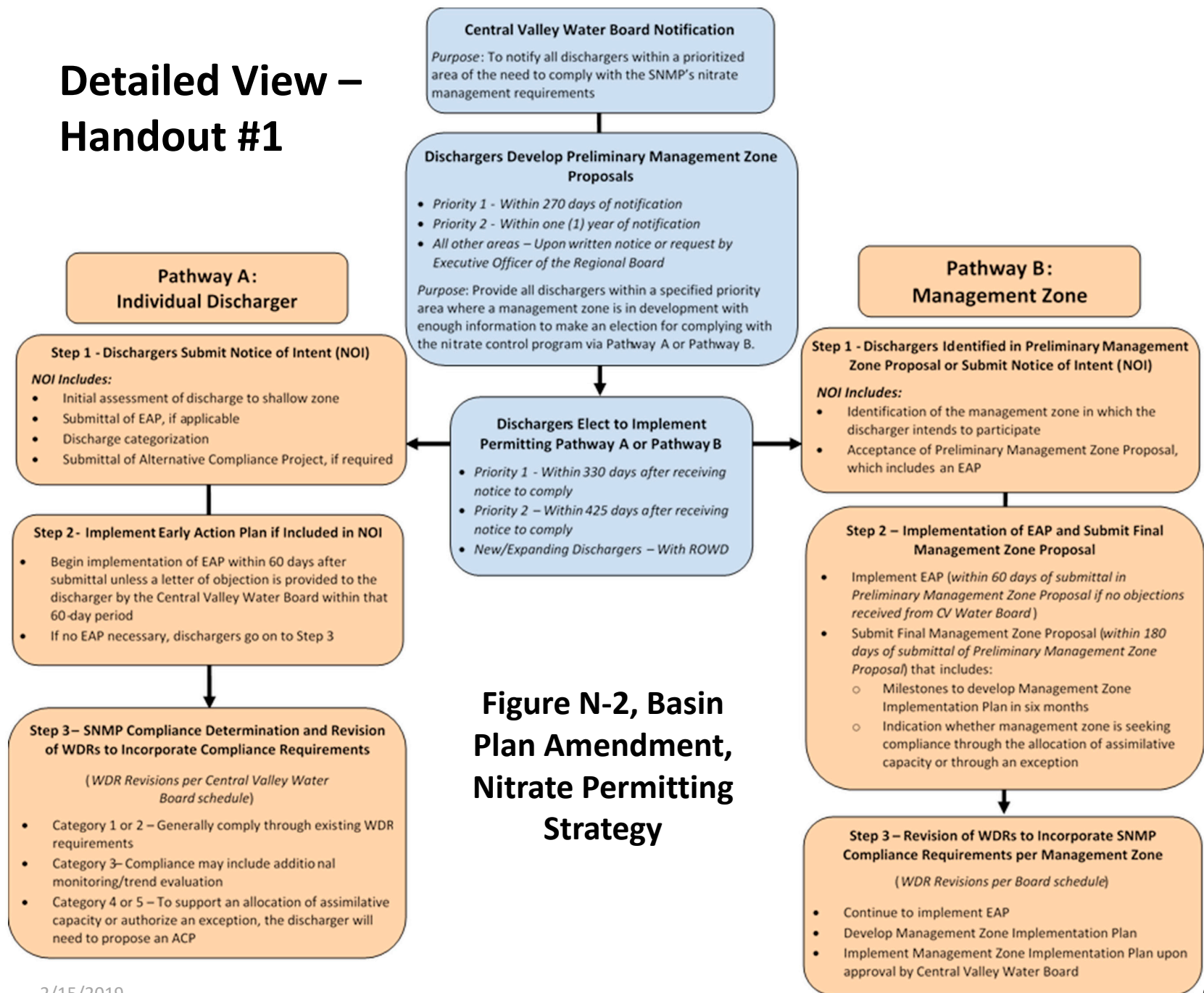
SIMPLE VIEW OF NITRATE CONTROL PROGRAM IMPLEMENTATION

Priority 1

Basin No.	Basin Name
5-22.11	Kaweah
5-22.03	Turlock
5-22.05	Chowchilla
5-22.13	Tule
5-22.02	Modesto
5-22.08	Kings

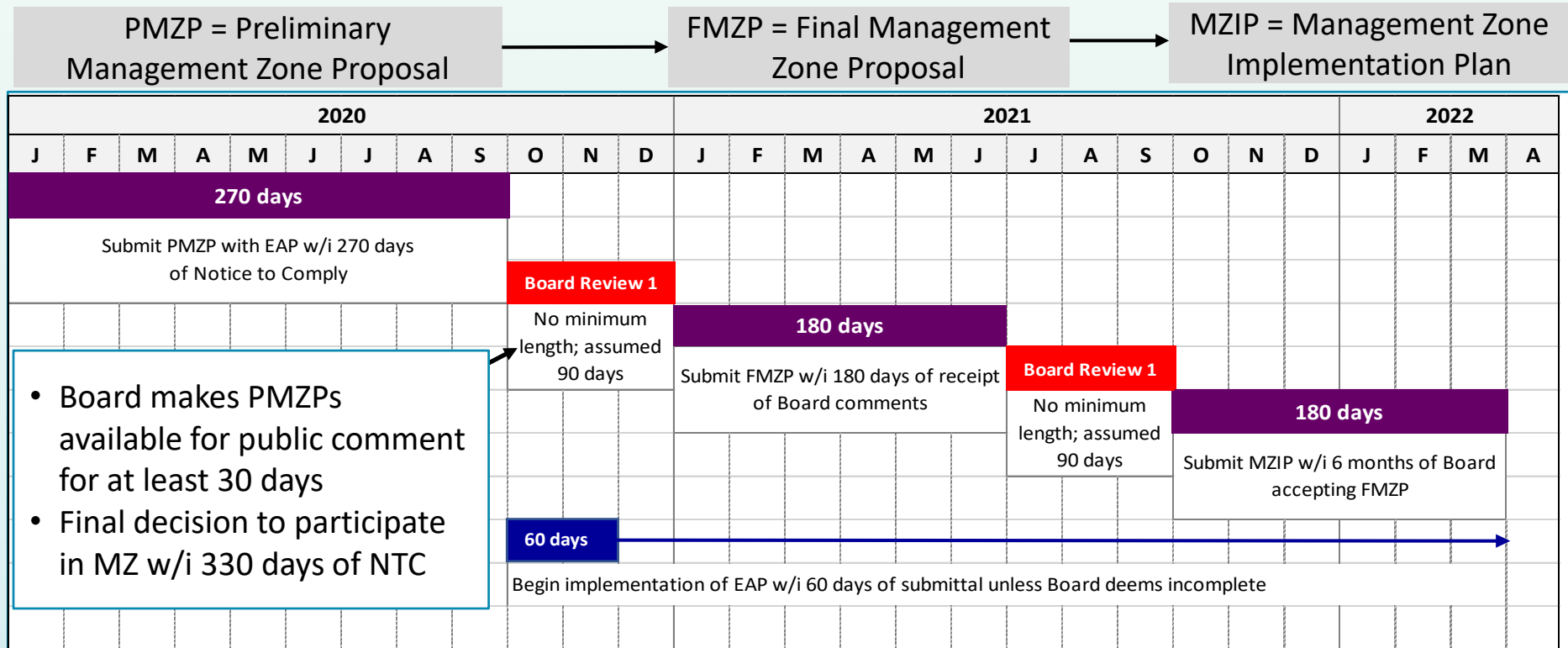


Detailed View – Handout #1



**Figure N-2, Basin
Plan Amendment,
Nitrate Permitting
Strategy**

PRIORITY 1 AREAS – MANAGEMENT ZONE SCHEDULE (HANDOUT #2)



Assumptions

- Priority 1 - Notice to Comply (NTC) within one year of the BPA effective date
- July 1, 2019 effective date; NTC no later than six months later
- Board review time between key deliverables is 90 days

WHY CONDUCT MANAGEMENT ZONE PILOT STUDIES?

- No templates exist for development of a Management Zone
- State Water Board provided grant funding to CV-SALTS to support early implementation of the Salt & Nitrate Control Program
 - Two Management Zone Pilot Studies funded (other project will be within the Kings River East GSA around the Alta Irrigation District)
- Grant deliverables relevant to the Nitrate Control Program:
 - Preliminary Management Zone Proposals with Early Action Plans
 - Templates for use by future developers of Management Zones



MANAGEMENT ZONE PILOT STUDY

2019	2020												2021												2022									
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A						
Management Zone Pilot Study Technical Assistance Grant Prepare Preliminary Management Zone Proposal with Early Action Plan	270 days																																	
	Submit PMZP with EAP w/i 270 days of Notice to Comply									Board Review																								
										No minimum deadline	180 days						Board Review																	
													Submit FMZP w/i 180 days of receipt of Board comments						No minimum deadline			180 days												
																						Submit MZIP w/i 6 months of Board accepting FMZP												
											60 days	Begin implementation of EAP w/i 60 days of submittal unless Board deems incomplete																						
Handout #2																																		

Handout #2

- Management Zone Pilot Study – provides opportunity to get a head start on meeting regulatory deadlines by
 - Using 2019 proactively to get ahead of upcoming deadlines
 - Taking advantage of State grant funds

MANAGEMENT ZONE CONCEPT

- Basin Plan Amendment Definition

“A discrete and generally hydrologically contiguous area for which permitted discharger(s) participating in the management zone collectively work to meet the goals of the SNMP and for which regulatory compliance is evaluated based on the permittees collective impact, including any alternative compliance programs, on a defined portion of the aquifer.

Where Management Zones cross groundwater basin or sub-basin boundaries, regulatory compliance is assessed separately for each basin or sub-basin...”



MANAGEMENT ZONE DELIVERABLES

- Preliminary Management Zone Proposal (Handout #3)
 - Includes Early Action Plan (Handout #4)
- Final Management Zone Proposal (Handout #3)
- Management Zone Implementation Plan (Handout #5)

PRELIMINARY MANAGEMENT ZONE PROPOSAL (HANDOUT #3)

Highlights: Preliminary Management Zone Proposal (PMZP)

Identify or Establish:

- Proposed preliminary boundaries of the Management Zone (MZ) area;
- Initial MZ participants/dischargers and other potential participants;
- Initial assessment of groundwater conditions;
- Current treatment and control efforts, or management practices;
- Initial identification of public water supplies or domestic wells within the MZ area with nitrate concentrations exceeding the water quality objective;
- Areas within/adjacent to the MZ that overlap with other management areas/activities;
- Early Action Plan (EAP) to address drinking water needs for those relying on wells with nitrate levels exceeding the water quality objective;
- Proposed timeline for (a) identifying additional participants; (b) further defining boundary areas; (c) developing proposed governance/funding structure for MZ administration; (d) additional evaluation of groundwater conditions across the MZ boundary area, if necessary; and (e) submittal of Final Management Zone Proposal and a Management Zone Implementation Plan; and
- Optional: Other constituents of concern that MZ will address.

FINAL MANAGEMENT ZONE PROPOSAL (HANDOUT #3)

Highlights: Final Management Zone Proposal (FMZP)

Update Preliminary Management Zone Proposal to Include:

- Timeline for development of the Management Zone Implementation Plan;
- Updated list of participants;
- Governance structure;
- Additional evaluation of groundwater conditions across MZ area (as needed);
- Proposed approach for regulatory compliance;
- How MZ intends to interact and/or coordinate with similar efforts, e.g., pursuant to the SGMA; and
- Documentation of actions taken to implement the EAP.

EARLY ACTION PLAN – REQUIRED ELEMENT OF PMZP (HANDOUT #4)

Highlights: Preliminary Management Zone Proposal (PMZP)

Identify or Establish:

- Proposed preliminary boundaries of the Management Zone (MZ) area;
- Initial MZ participants/discharge
- Initial assessment of groundwater domestic wells within MZ area with nitrate concentrations exceeding the water quality objective.
- Current treatment and control
- Initial identification of public
- nitrate concentrations exceeding
- Areas within/adjacent to the
- Early Action Plan (EAP) to
- nitrate levels exceeding the
- Proposed timeline for (a) identify
- boundary areas; (c) develop
- administration; (d) additional
- boundary area, if necessary
- Management Zone Implementation
- Optional: Other constituents of concern that MZ will address.

EAP Purpose: Address public water supplies or domestic wells within MZ area with nitrate concentrations exceeding the water quality objective.

Key elements:

- Process to identify affected residents and conduct outreach to ensure impacted users are informed and can participate in identifying solutions
- Process to coordinate with non-dischargers
- Specific actions/implementation schedule to address immediate drinking water needs
- Funding mechanism to implement EAP

MANAGEMENT ZONE IMPLEMENTATION PLAN (HANDOUT #5)

Highlights of Management Zone Implementation Plan (MZIP) Requirements

Address how:

- Safe drinking water supply is assured;
- Balanced nitrate loadings will be achieved (to the extent reasonable, feasible and practicable); and
- Nitrate levels in groundwater will be restored to concentrations at or below water quality objectives (to the extent reasonable, feasible and practicable)

Identify or Include:

- Funding/cost share agreements or process to establish agreements to implement Plan;
- Nitrate management activities (may be prioritized);
- Water quality characterization to be used as a basis for measuring progress;
- Short (≤ 20 years)/long-term (> 20 years) projects and/or planning activities to implement
- Implementation schedule with interim milestones;
- Triggers for alternative procedures if interim milestones unmet;
- Surveillance and monitoring program; and
- Responsibilities of each discharger, or groups of dischargers to manage nitrate.

PILOT STUDY PROJECT SCOPE AND SCHEDULE

- Pilot Study Deliverable: Preliminary Management Zone Proposal (PMZP) with an Early Action Plan
- Work will be completed in collaboration with this Steering Committee by GEI Consultants and Luhdorff & Scalmanini Consulting Engineers
- Handout #6 – Provides specific Pilot Study tasks and linkage to PMZP regulatory requirements
- Schedule
 - Per Grant, targeting June for completion of draft deliverables
 - Demonstrate significant progress to State Water Board during BPA approval process this spring

STEERING COMMITTEE FORMATION



WHY DO WE NEED A STEERING COMMITTEE?

- Goal of the project is to develop a Preliminary Management Zone Proposal consistent with the regulatory requirements of the Nitrate Control Program
- Preliminary Management Zone Proposal includes various requirements for collaboration/coordination with other stakeholders, e.g.,
 - Proposal includes an Early Action Plan that obligates participants to provide safe drinking water

Pilot Study deliverables should be reviewed and vetted by those directly affected by participation in the proposed Management Zone

WHO SHOULD PARTICIPATE ON THE STEERING COMMITTEE?

- Participation may be very broad, e.g.,
 - Any entity or group of entities with a permitted discharge within the proposed Management Zone area
 - Stakeholders with drinking water concerns
 - Planning/regulatory agencies
- Ideally, individuals participating in meetings are decision-makers, who are able to speak for whom they represent

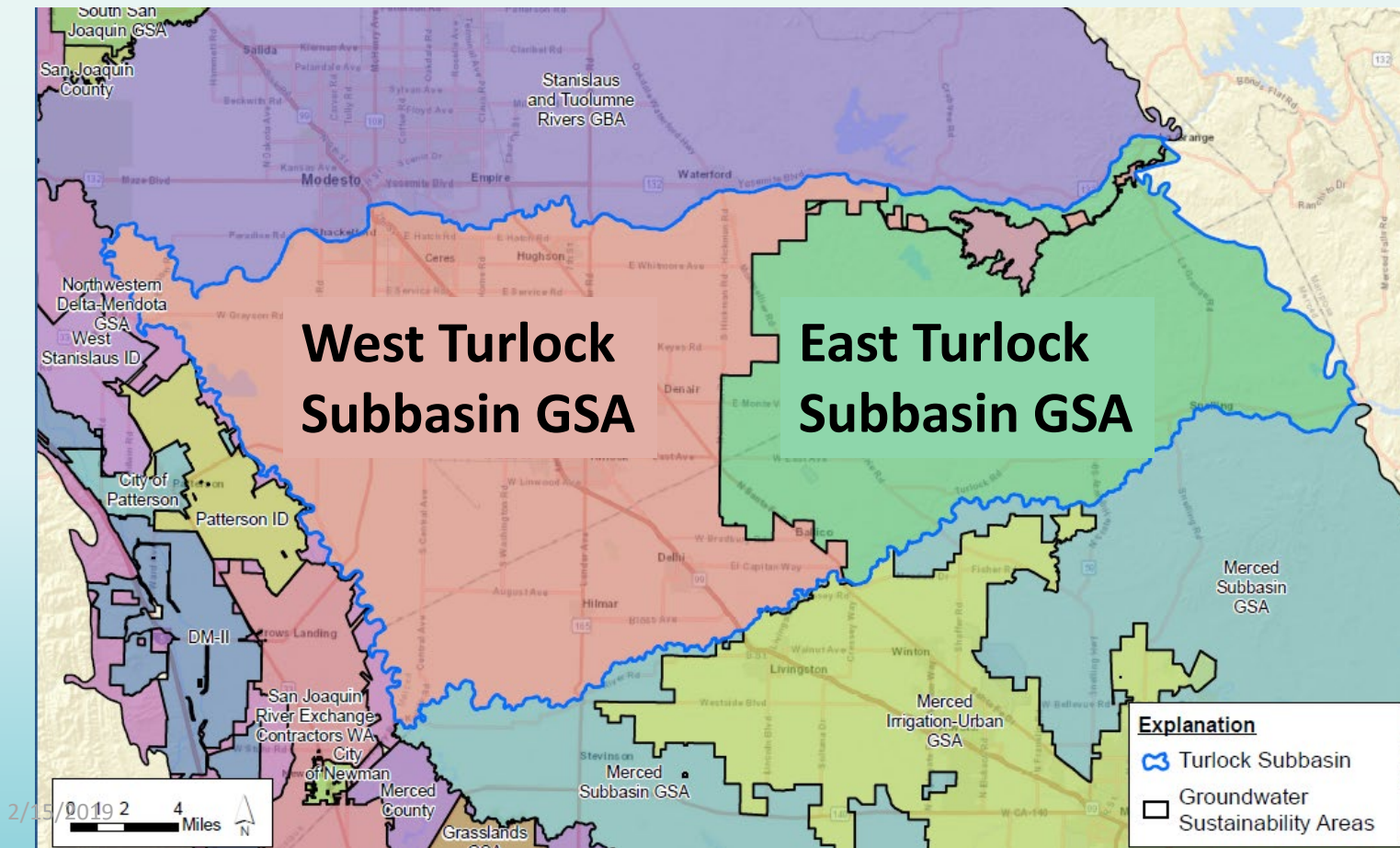


INITIAL PROJECT TASKS

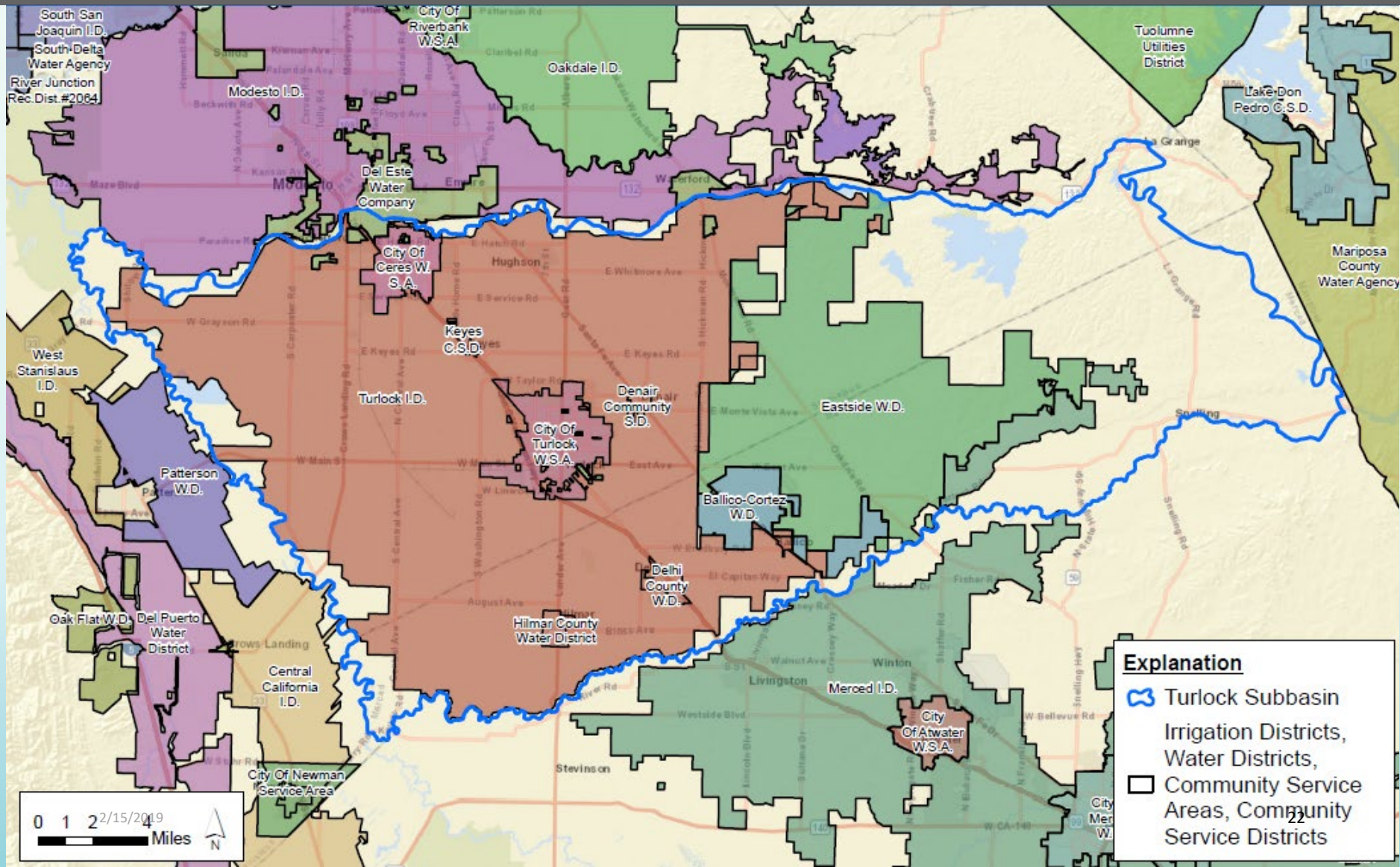
- Management Zone boundary delineation
- Identification of areas with high nitrate conditions; disadvantaged communities
- Early Action Plan development

GSAs NEAR TURLOCK SUBBASIN

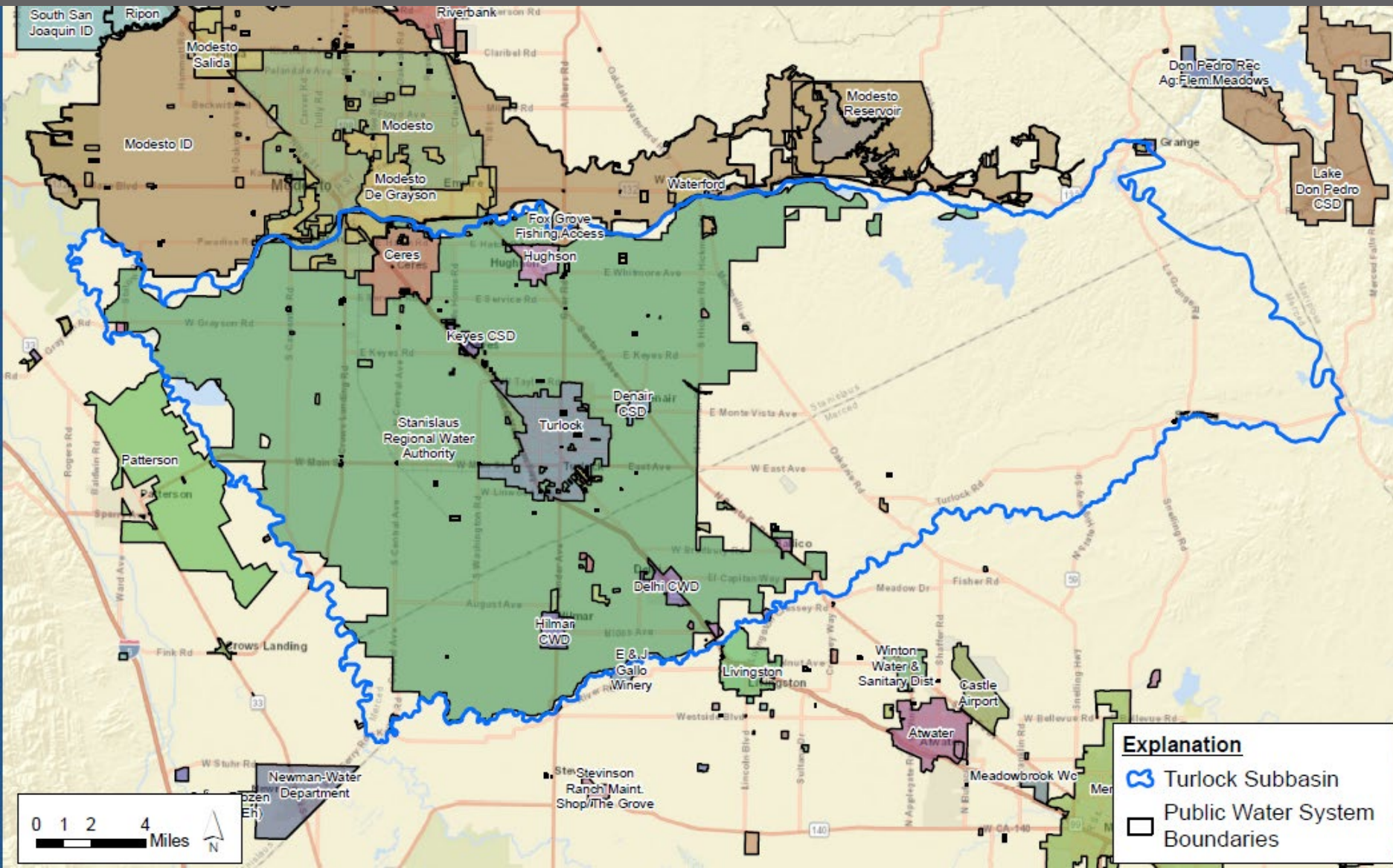
- Hydrologically contiguous area
- Dischargers in MZ work collectively to meet goals of BPA
- BPA and SGMA: Consider some of the synergies



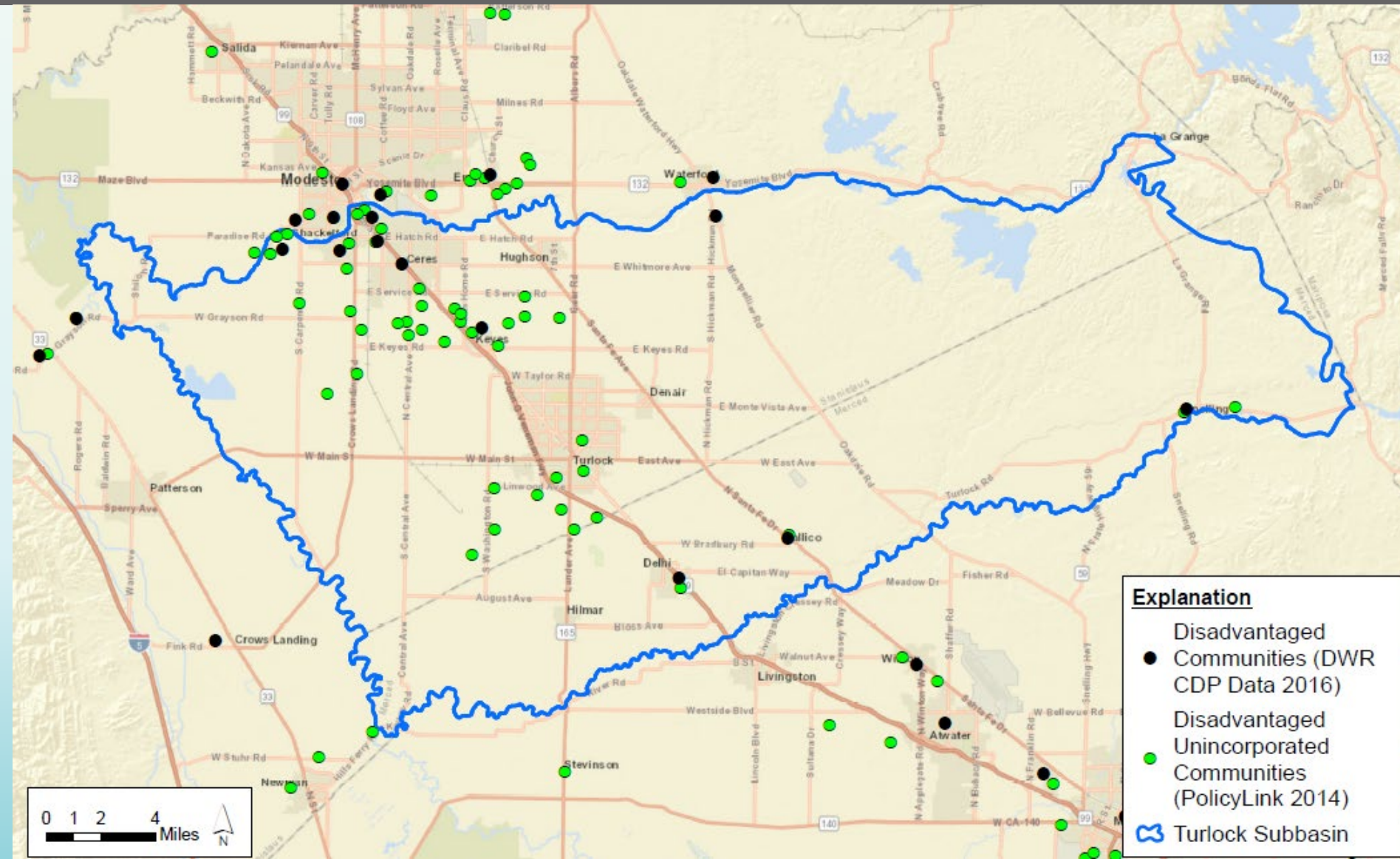
OTHER AGENCIES IN TURLOCK SUBBASIN



PUBLIC WATER SYSTEMS

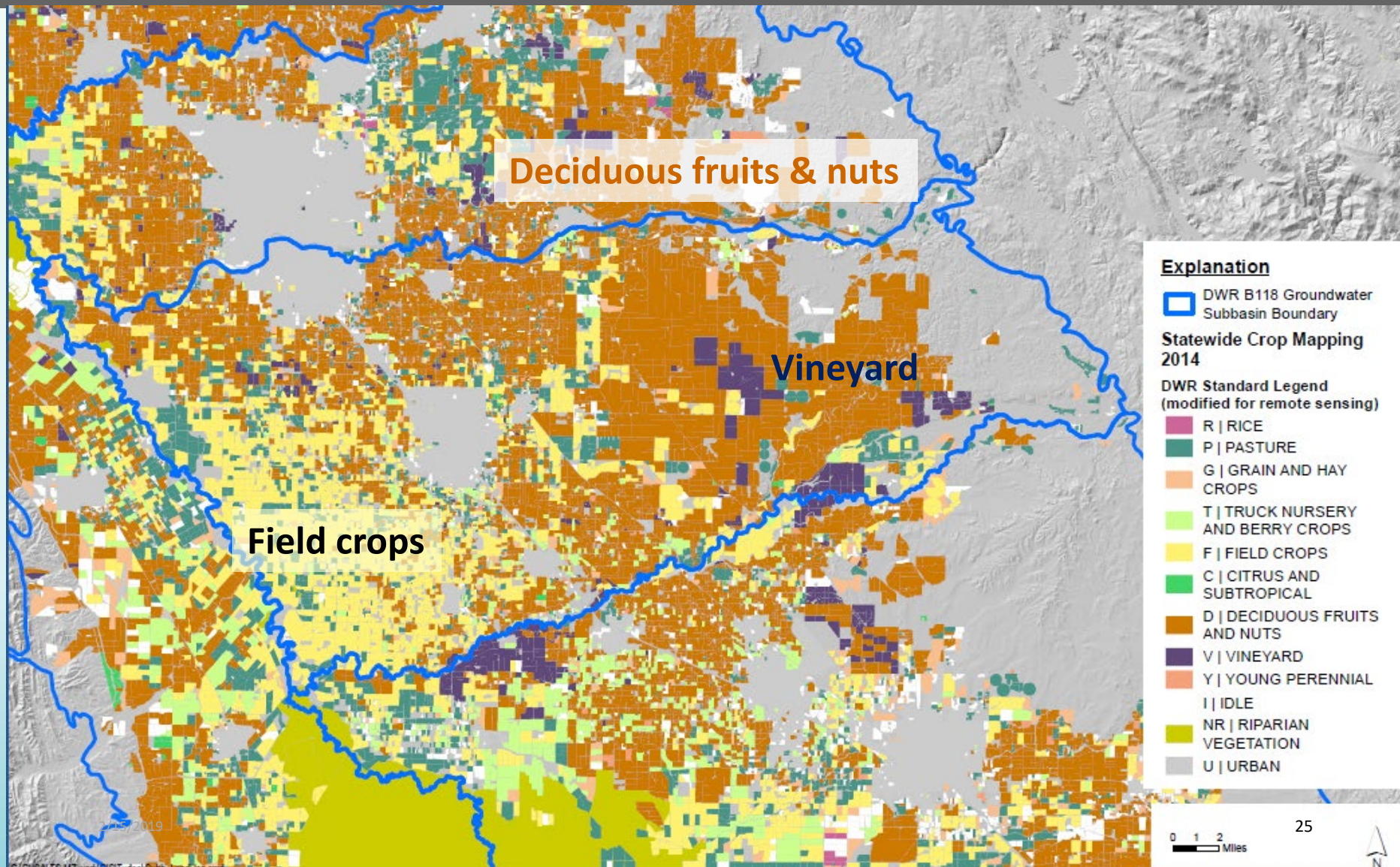


PRELIMINARY MAP OF DISADVANTAGED COMMUNITIES



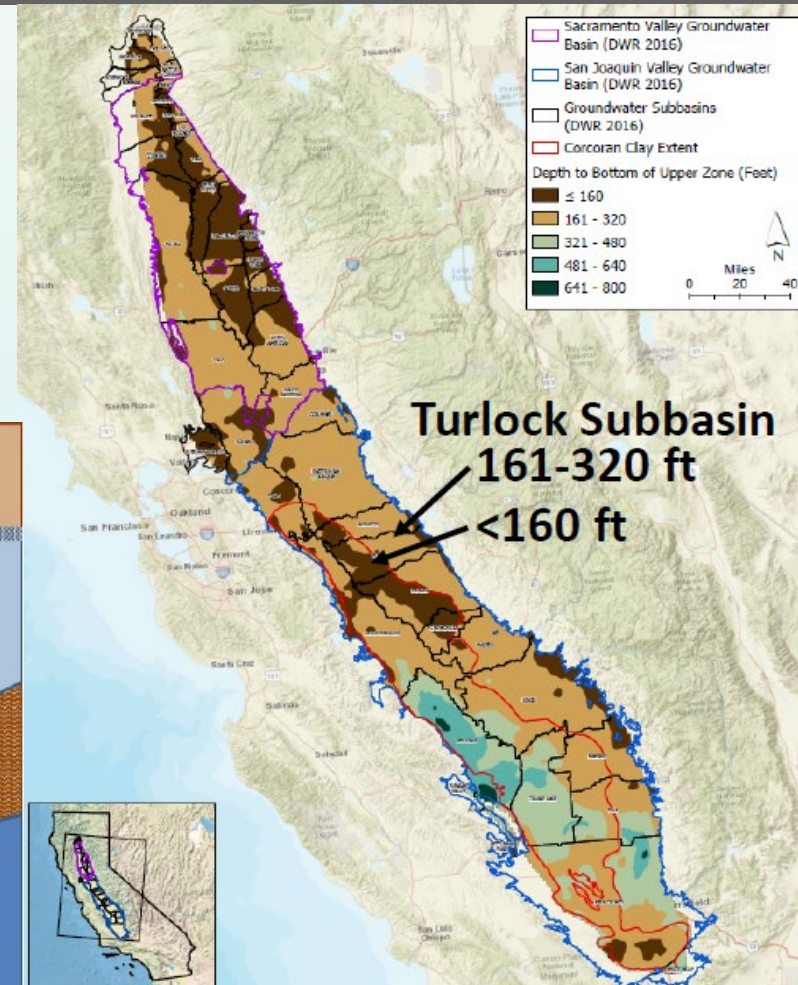
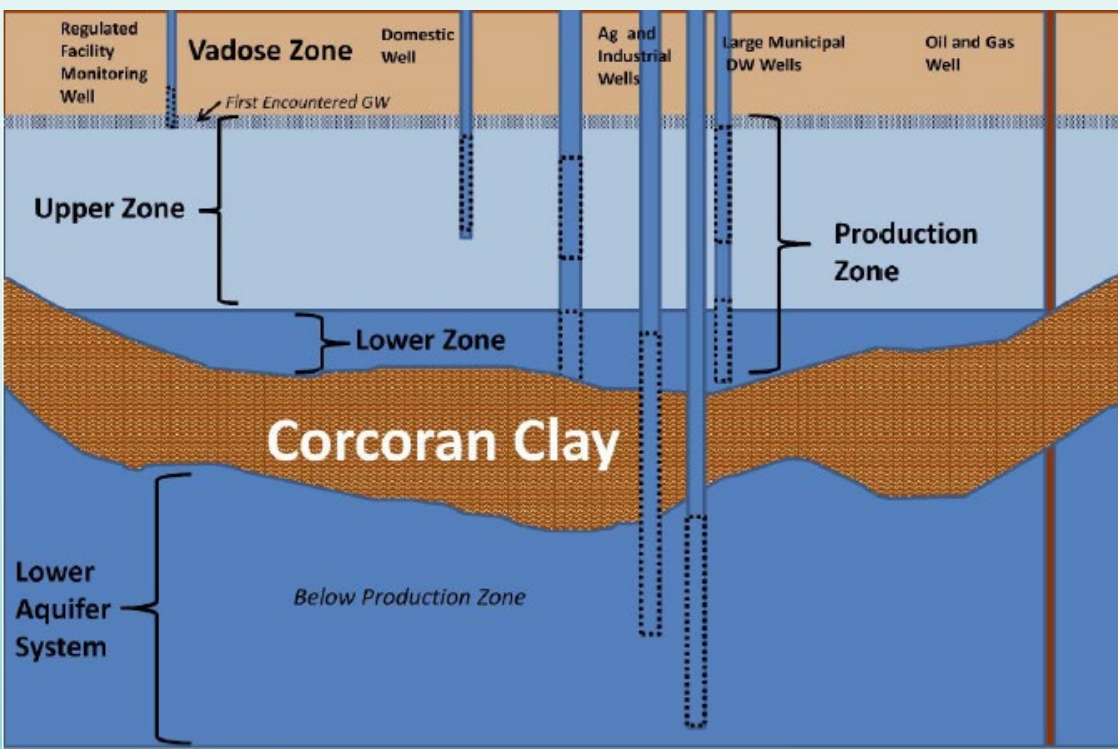
EXAMPLE OF ONE TYPE OF LAND USE

DWR CROP MAP (2014)

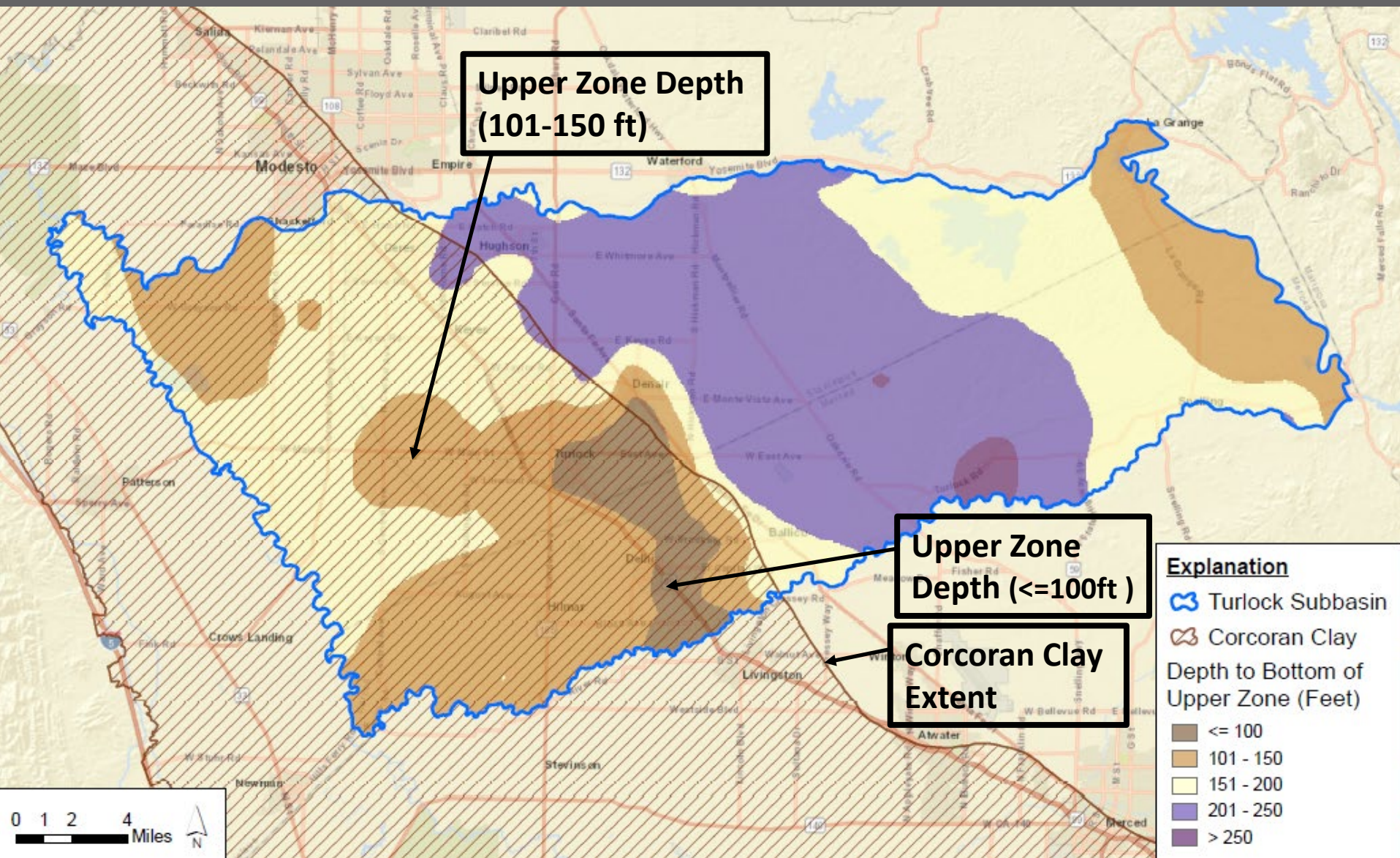


DEPTH TO BOTTOM OF UPPER ZONE (CENTRAL VALLEY)

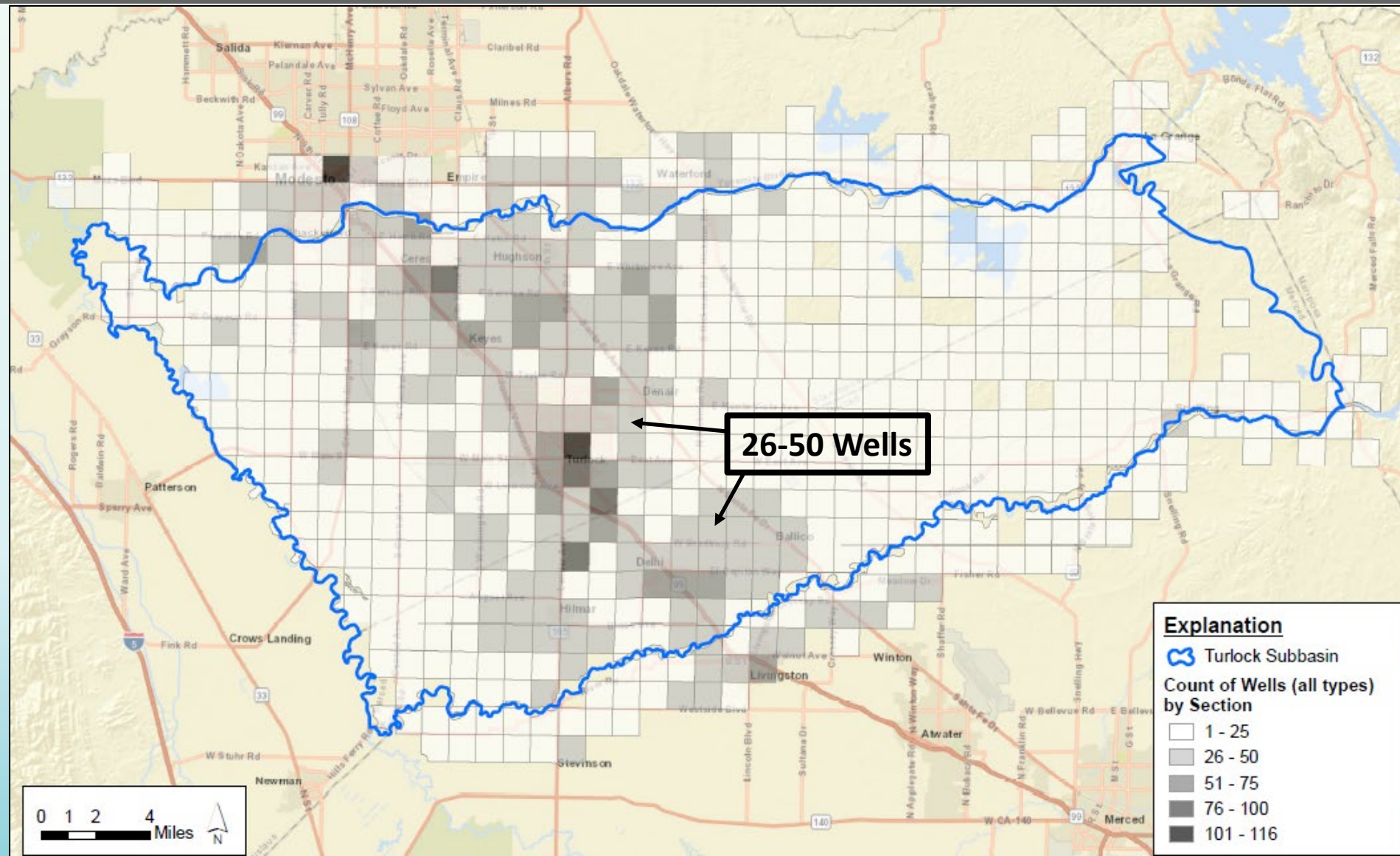
- Results of CV-SALTS data interpretation
- Depth of Upper Zone variable across Central Valley; 1 sq. mile interpretation



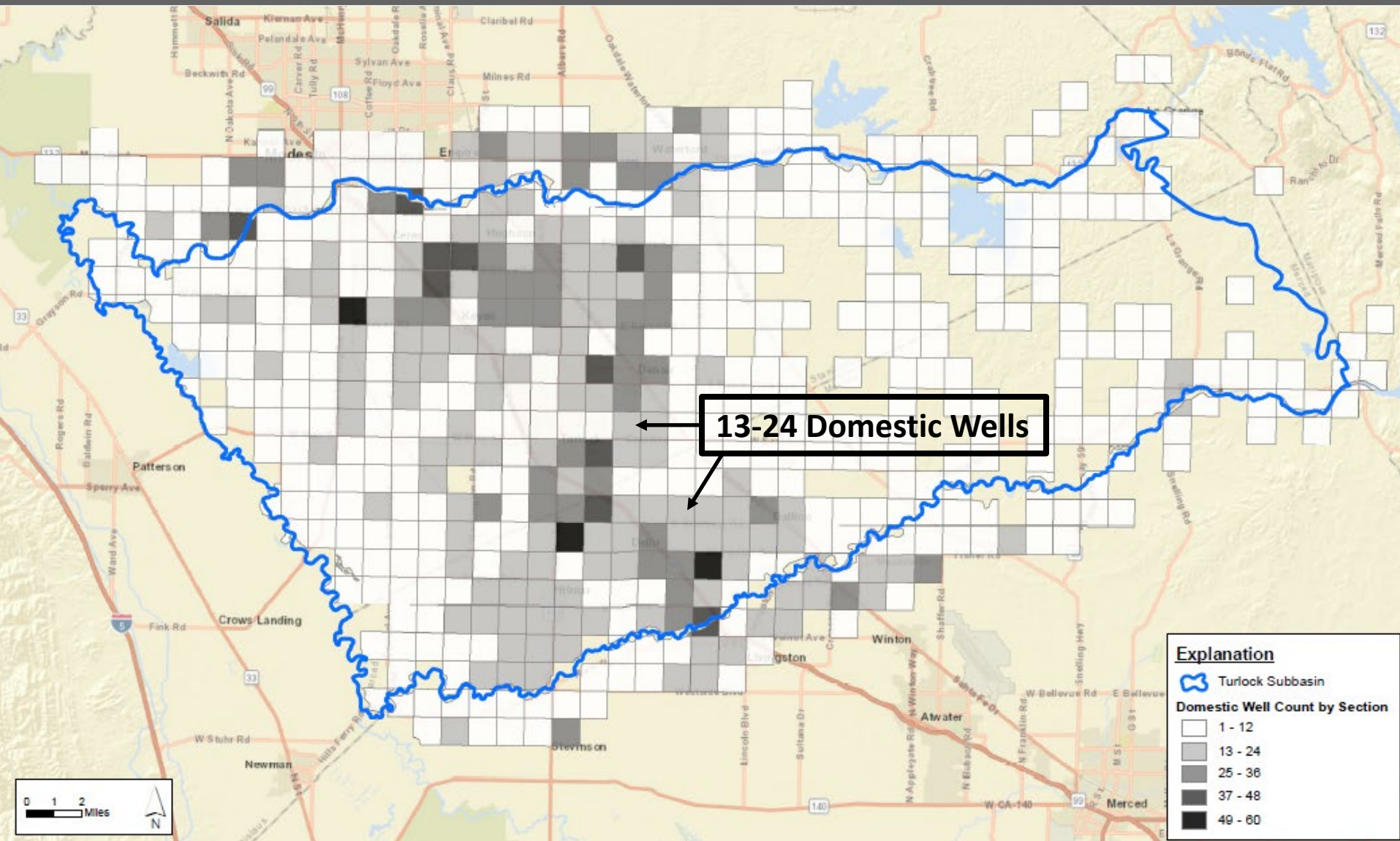
DEPTH TO BOTTOM OF UPPER ZONE TURLOCK SUBBASIN



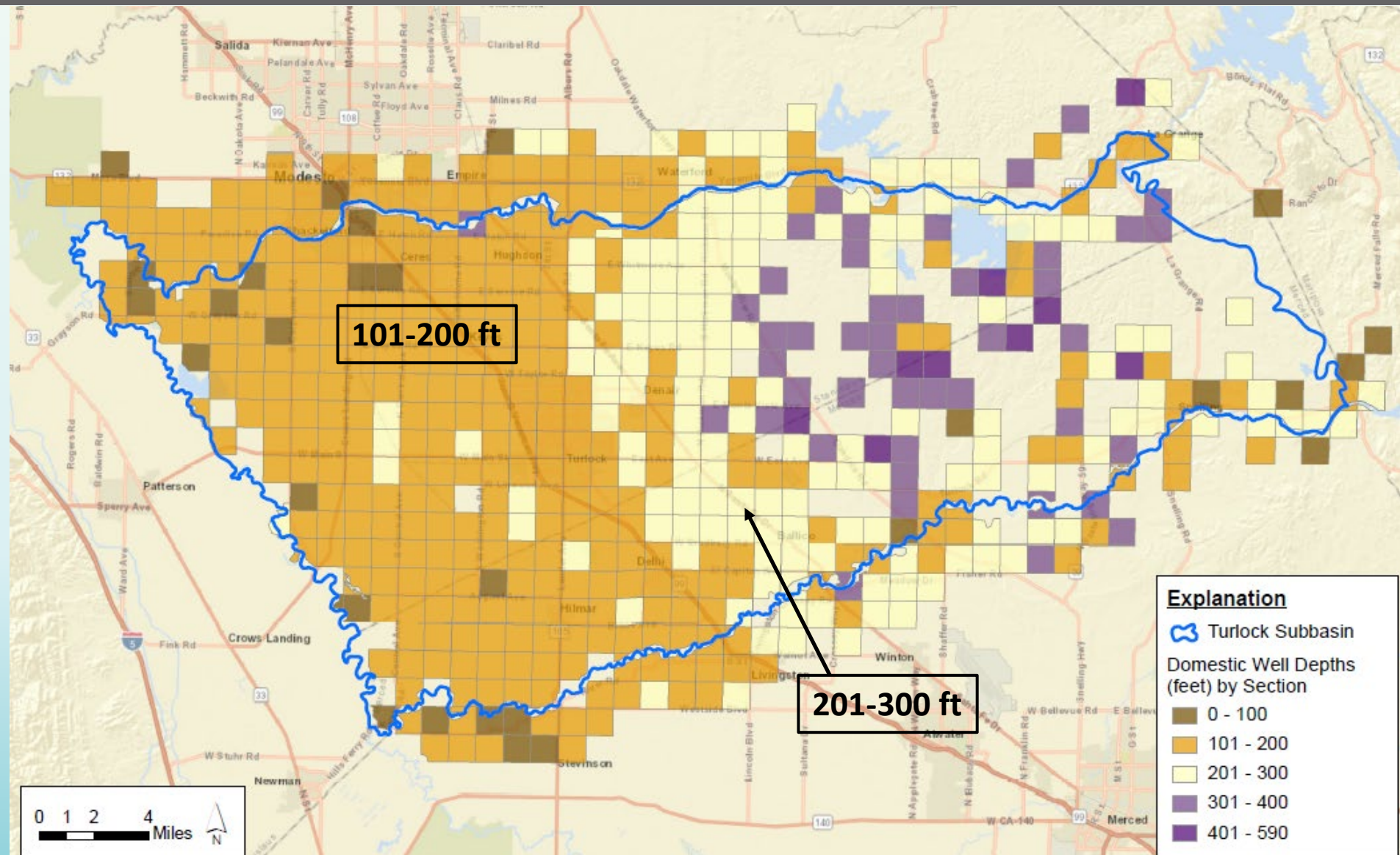
WELL DENSITY: ALL WELLS



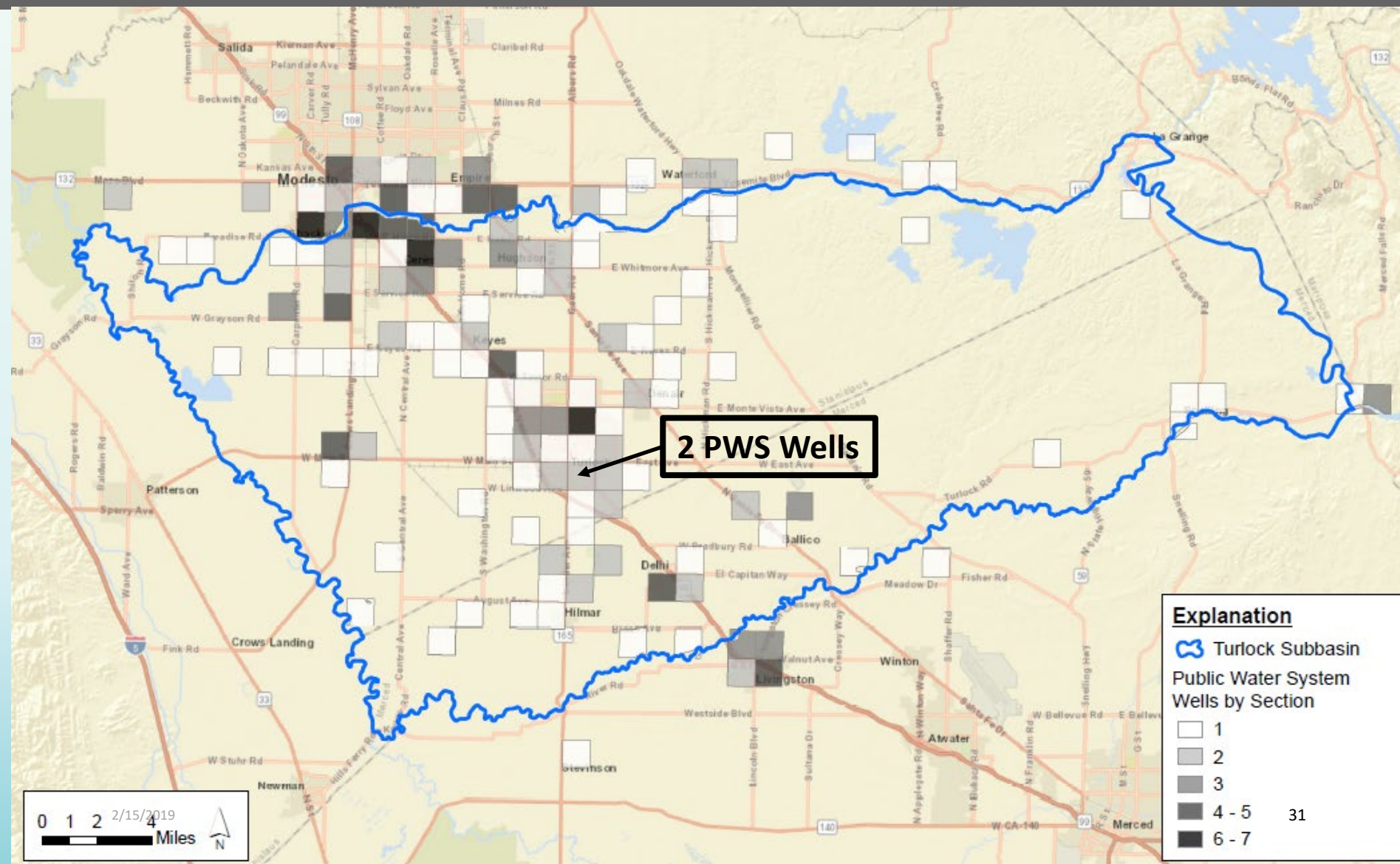
DOMESTIC WELL DENSITY



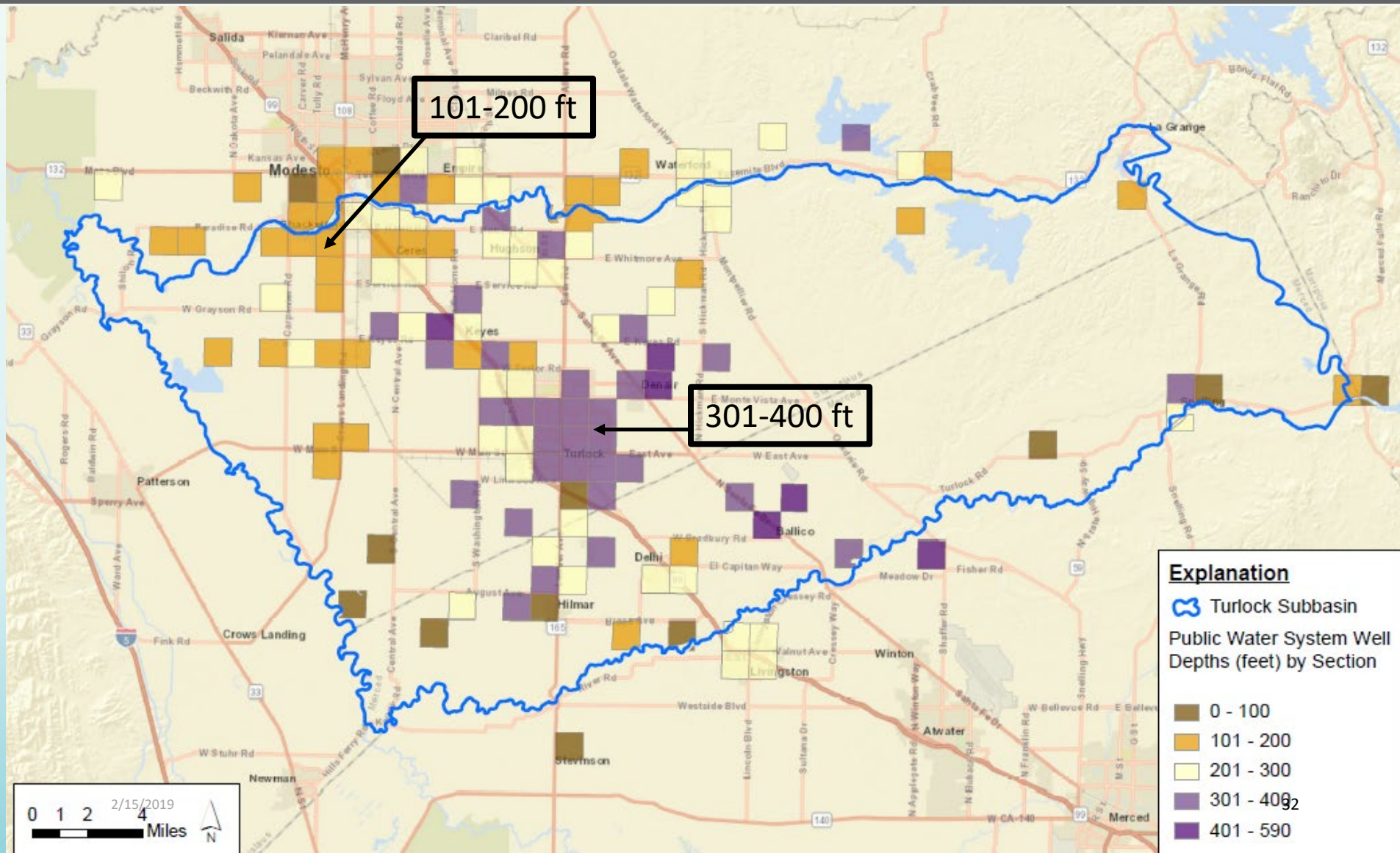
DOMESTIC WELL DEPTHS



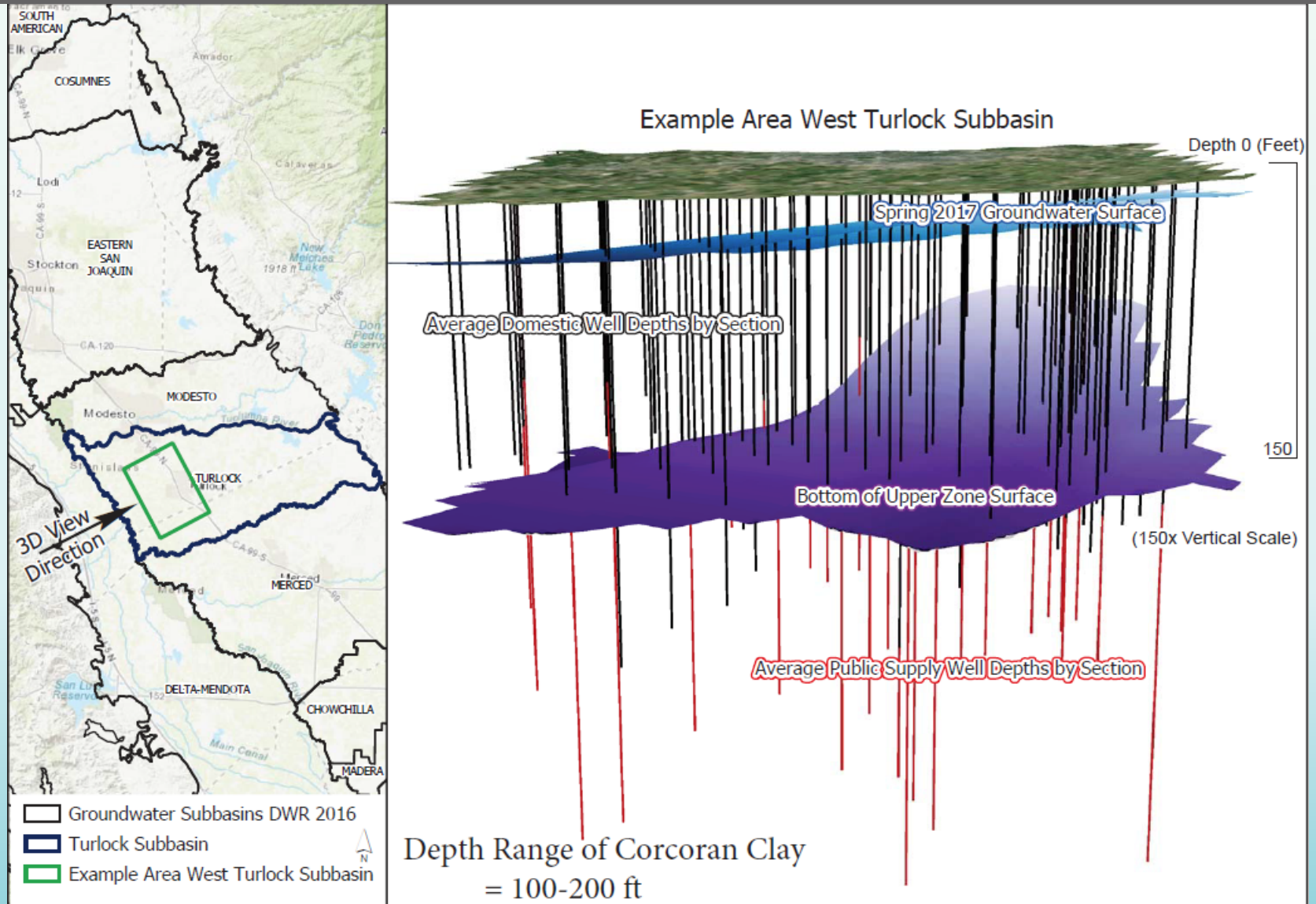
PUBLIC WATER SYSTEM WELLS



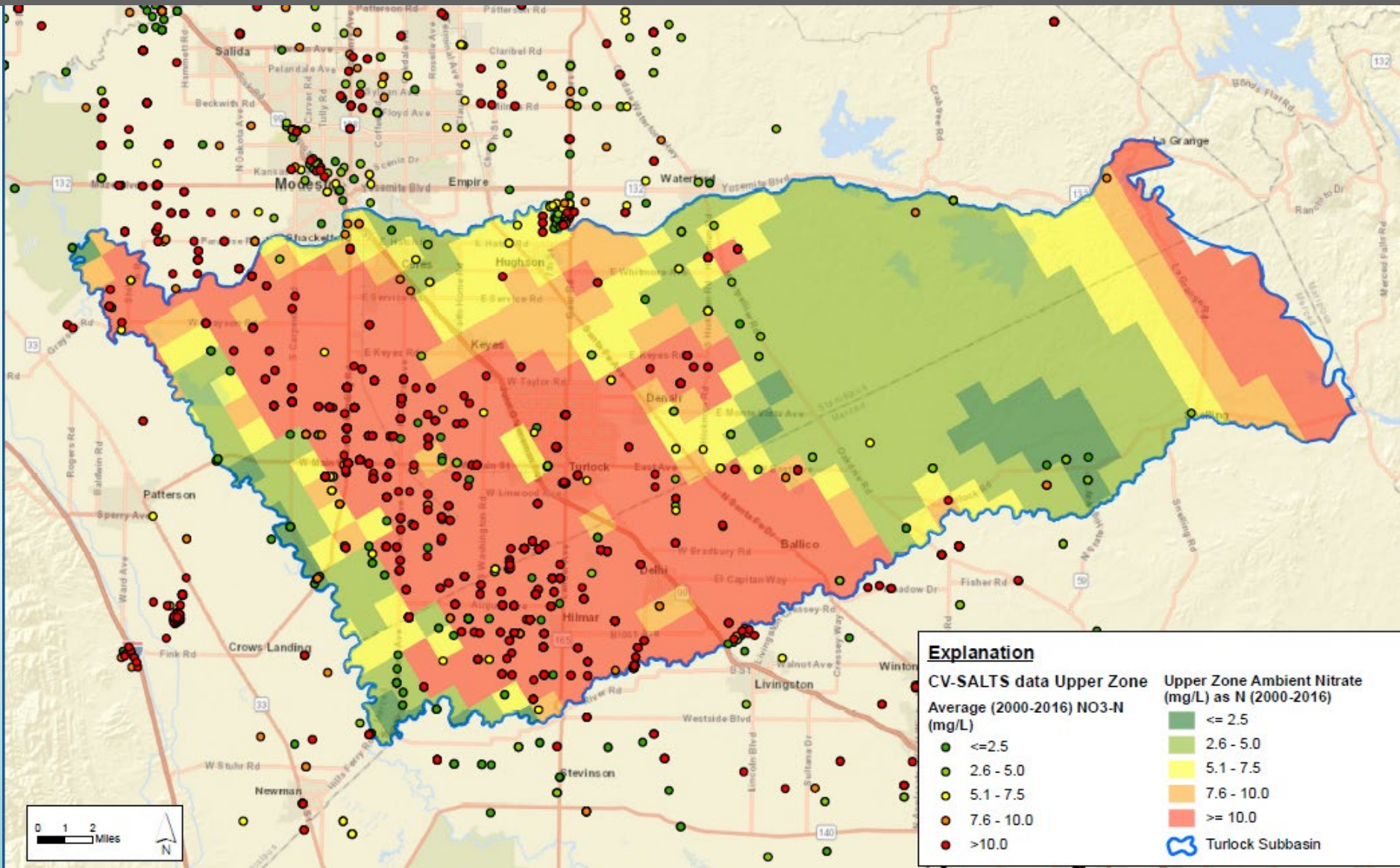
PUBLIC WATER SYSTEM WELL DEPTHS



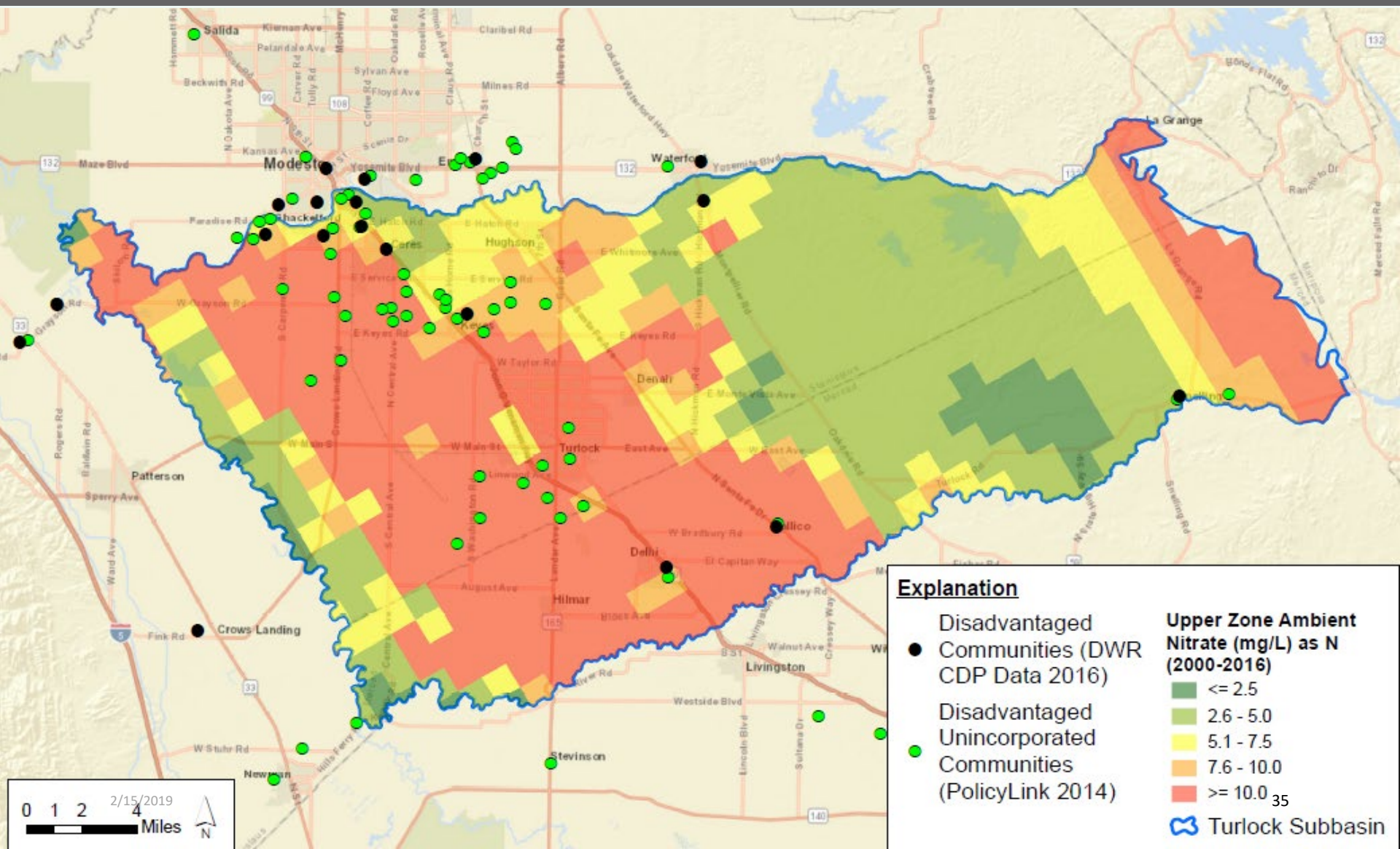
SCHEMATIC: AVERAGE DOMESTIC WELL AND PUBLIC WATER SUPPLY WELL DEPTHS



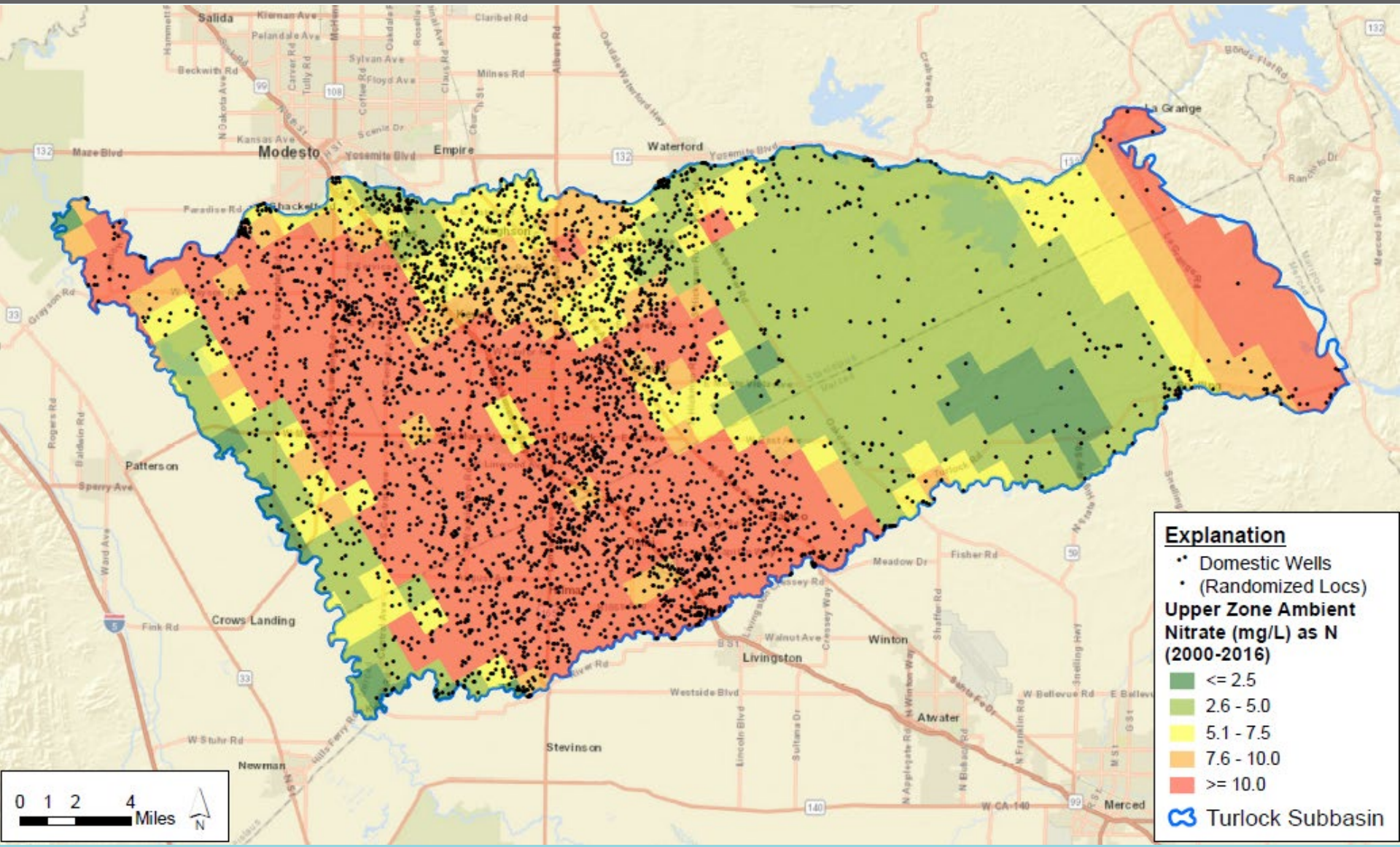
ESTIMATED AMBIENT NITRATE CONCENTRATIONS, UPPER ZONE



DACs/DUCs AND NITRATE CONCENTRATIONS, UPPER ZONE



NITRATE CONCENTRATIONS AND ESTIMATED LOCATIONS OF DOMESTIC WELLS



ADDITIONAL DATA INTERESTS

- DACs/DUCs/Related
 - Policy Link: DUC polygon information
 - Other
- Domestic Wells
 - Better location information than in DWR dataset
 - Information to connect well/property owners to drillers' reports
 - Other
- Groundwater quality data
 - Seeking quality data not available on public websites
 - Groundwater quality data: Prefer for wells with construction information
- Permitted discharge sites (i.e., information not available on public websites)

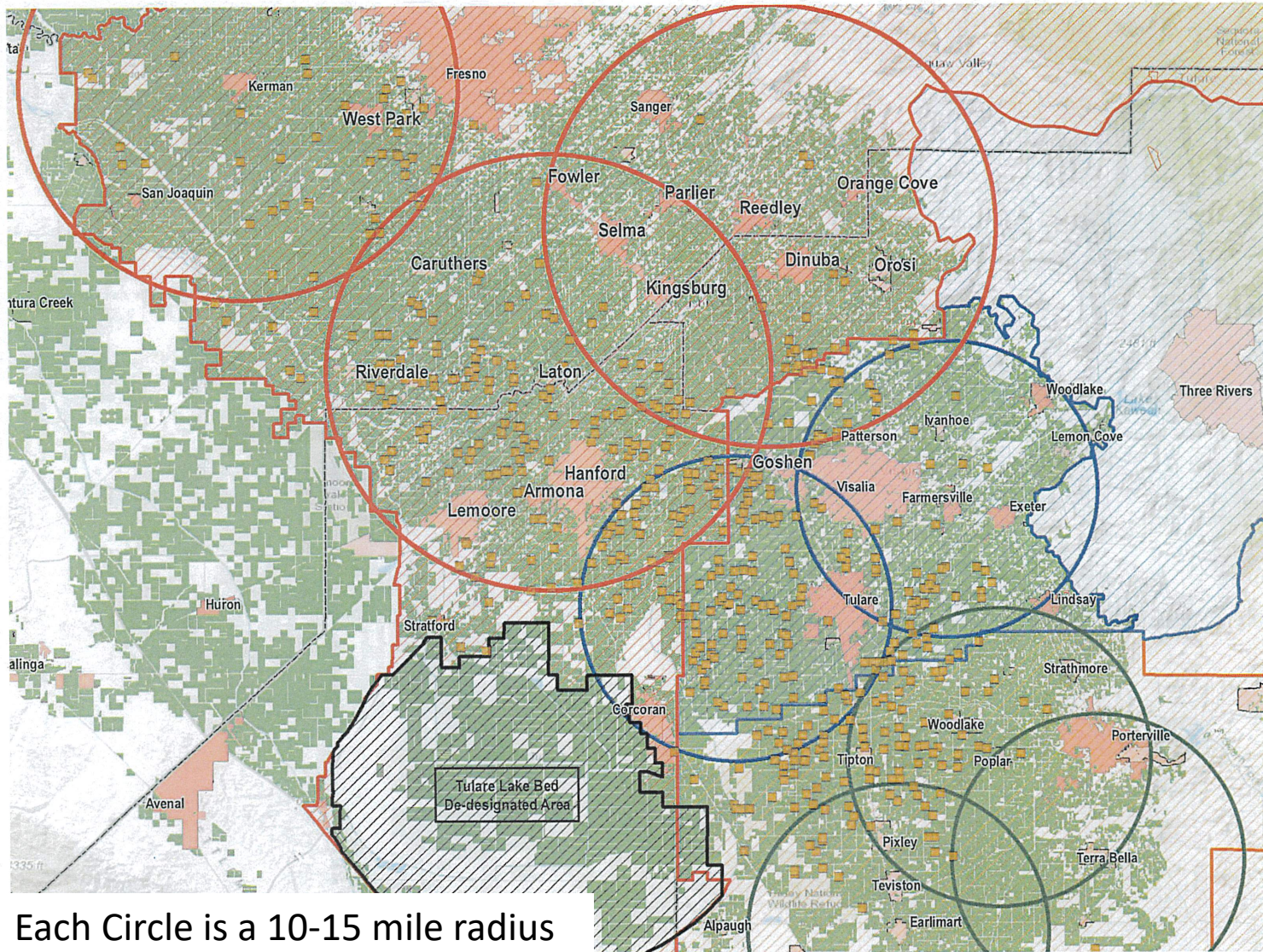
EARLY ACTION PLAN DEVELOPMENT

- Process to identify affected residents and conduct outreach to ensure impacted users are informed and can participate in identifying solutions
- Process to coordinate with non-dischargers
- Specific actions/implementation schedule to address immediate drinking water needs
- Funding mechanism to implement EAP

REPLACEMENT WATER SETTLEMENT AGREEMENT – POTENTIAL EAP TEMPLATE

- Handout #7 – Recent Agreement establishes the basis for a Replacement Water Program that is consistent with the following requirements of the Early Action Plan
 - Provides alternative drinking water source now while exploring longer-term alternatives for a more permanent solution
 - Includes a specified level of outreach in the affected areas
 - Requires participants work collaboratively to implement/fund the Agreement
- Agreement states:
 - ...provision of replacement water as provided pursuant to this Agreement fulfills all or parts of an Early Action Plan (EAP) that is part of proposed Central Valley Water Board basin plan amendments for a Nitrate Control

EXHIBIT B – REPLACEMENT WATER AGREEMENT



Each Circle is a 10-15 mile radius

TURLOCK MANAGEMENT ZONE EARLY ACTION PLAN – NEXT STEPS

- If Steering Committee agrees that this Agreement can serve as a template for an EAP, next steps include:
 - Determine what elements, if any, require enhancement or more information to fully satisfy the EAP requirements
 - Work with Steering Committee members on developing process to (a) identify affected residents to conduct required outreach; and (b) coordinate with non-dischargers (other than those already on the Steering Committee)
 - Identify specific actions and schedule, e.g., identify target areas for providing alternative water supplies and schedule for implementation
 - Address funding requirements of the EAP



PARTICIPATION BY REPRESENTATIVES OF OTHER HIGH PRIORITY BASINS

Committee Discussion





OVERVIEW OF NEXT STEPS

MANAGEMENT ZONE PILOT STUDY – NEXT STEPS

- Perform initial assessment of groundwater conditions
- Identify public water supply and domestic wells with high nitrates
- Identify additional potential participants in the Study
- Identify permittees within proposed Management Zone boundary
- Compile existing nitrate treatment and control efforts, or management practices of participating permittees

FINAL AGENDA ITEMS

- Action Items
- Next Steering Committee Meeting



Adjournment